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ABSTRACT

This booklet on household equipment, 1 in a series of 12, covers all the basic aspects of personal- and family-money management. Suitable for use by high school and college students as well as adults, this handbook offers information to help buyers purchase household equipment that is within their budget. Section 1 discusses managing equipment dollars. Topics include establishing a spending plan, determining methods of payment, checking home facilities, recognizing equipment-safety features, and discussing 10 points to help consumers become more knowledgeable when shopping for household equipment. Section 2 provides buying guides for major kitchen appliances (ranges, refrigerators, freezers, dishwashers, food-waste disposers, and trash compactors), water-softening equipment, water-heating equipment, major laundry appliances (washers and dryers), floor care appliances, and portable electric appliances. In section 3 are tips on using household equipment, appliance services, and safety. (YLB)

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money management

Your Equipment Dollar

Edited by

MONEY MANAGEMENT INSTITUTE

Joyce E. Bryant
Vice President—Director

Nancy H. Baran
Editor

Sharon M. Tarrant
Editor

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INTRODUCTION

Household appliances make it possible to accomplish many jobs in a short time with minimum effort. Convenience features and improved performance, as well as appealing colors and designs, make major and portable appliances boons of better living. Yet, choosing the right appliances within the price range you can afford may be no easy task.

Awareness of personal needs, wants and income, product information, available features, and shopping techniques can help you choose suitable appliances. This booklet offers information to help you select and operate useful household equipment on the amount of money you have to spend.

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To The Reader

The sponsor of this booklet is Household Finance Corporation. We are a highly diversified, multinational company, with major businesses engaged in consumer finance and other financial and insurance services, merchandising, manufacturing and transportation.

For fifty of its one hundred years of existence, HFC has prepared and distributed **Money Management** educational materials. Why do we sponsor this type of program? Just as a good physician is interested in the physical well-being of individuals and families, we have a deep interest in their financial health. Our present **Money Management** materials include booklets, filmstrips and leaflets that cover the most important areas of personal and family finance. Their content is based on continual research and experience, as well as on consultation with specialists in education, business and government.

It is gratifying that our materials continue to be used so extensively by educators in high schools, colleges and universities . . . by extension workers . . . journalists, radio and TV commentators . . . by social workers . . . youth counselors . . . clergymen . . . by leaders in business, industry, government and the community . . . as well as by individuals and families. This acceptance encourages our continued support of a program which has as its aim the development of informed, educated consumers, well able to protect their economic interests.

G. R. Ellis
Chairman of the Board and Chief Executive Officer
Household Finance Corporation

Managing Equipment Dollars

Today's household appliances are enjoyable as well as functional assets to every home. Modern living seems to depend on many major and portable appliances—from dishwashers to hair stylers. But you will gain the most value from your appliances when you select only those that fit your needs, wants and income.

Some major appliances require sizable investments of money. Many increase the demand for today's limited resources of electricity, gas and water. These are sound reasons for taking a close look at each equipment purchase you make. You save money while conserving energy when you buy the proper appliance for your needs and wants.

To make the most of your equipment dollars, consider the other demands on your income as well as any special installation, operating or servicing costs the appliance might require. All costs for purchasing, installing and maintaining household equipment should be considered in relation to your overall spending and saving plan. Servicing and repair expenses are to be expected with the increase of automatic and multipurpose units that have many working parts. Responsible manufacturers or dealers will tell you what service they provide and the cost. The place (apartment, house, suburb, city or rural area) and section of the country where you live may influence the type of costs you can expect.

Plan Your Spending

The amount of money you spend on household equipment is a personal matter. Your values, the things you consider most important, influence your decisions. But, planned spending is essential if you are to get the most from the money you have. Your spending plan for equipment purchases will be most practical when based on expenses during the year.

To decide how much money you can afford to spend on equipment, consider these questions. What is the total amount of money you have to spend? How much must you spend to meet fixed expenses such as rent or mortgage payments, utilities, installment debts, etc.? How much must you set aside for flexible expenses such as food, clothing, transportation, etc.? How much can you spend on household equipment?*

When you have decided how much you can spend on equipment, you are ready to set up your spending plan. On the form on the next page, enter the period for which you are planning and write down the total amount you plan to spend on appliances during that time. Then, make a list of the major and portable appliances you intend to buy, listing major appliances first since these items represent large purchases. Also, list in order of priority those appliances you need and want first.

Knowing how long an appliance is expected to last can help you plan for replacements. The USDA estimates the average service-life expectancy for some major appliances as follows: automatic washers, 11 years; dryers, 13 years; ranges, 12-13 years; refrigerators, 15 years; freezers, 20 years. These figures will vary, of course, depending upon the appliance quality, where and how often it's used, and the service and care received.

When buying an appliance, the purchase price is only part of the cost involved; the cost of operating and servicing it should also be considered. The FTC requires energy labeling for refrigerators, freezers, clothes washers, dishwashers, and water heaters, which should help consumers estimate their operating costs. (In Canada, this labeling is available for refrigerators.) Each label provides estimated costs of operating an appliance for one year and the energy costs for models similar in size. Additional cost information is available in chart form, which enables consumers to estimate the cost of operation based upon the cost of energy in their area and the number of hours they plan to use the appliance. While the more efficient model may cost more initially, the savings to be had over the life of the appliance may make up any difference in price. Operational cost, of course, is not the only factor to consider when buying an appliance; reliability, safety and ease of operation are also important.

To decide whether a gas or an electric appliance is best for you, consider the following factors:

- the initial cost of the appliance, gas vs. electric
- the comparative costs of using gas and electricity in your geographic area
- the suitability of your home and the comparative costs of installing each type of equipment
- the type of energy you now use for appliances
- your personal preference
- which energy sources are available in sufficient supply in your area

The money you spend for servicing appliances is an essential part of the total cost of home equipment and should be included in your spending plan. While many appliances are under warranty, which defrays some of the repair costs for the first few years, plan for unexpected costs once the warranty expires. Generally, repair costs increase with the number of tasks an appliance performs.*

If the total cost of household equipment exceeds the amount you have to spend, evaluate your list and make the necessary adjustments. Is it possible to postpone some purchases? You may be able to save money by waiting for sale prices. Can you reduce spending in other areas? By taking the time and effort to put your spending plan on paper, you organize your purchases, shop more effectively, meet your appliance needs and stay within the limits of your income.

*YOUR FINANCIAL PLAN, listed on page 40, provides additional information on setting up an overall spending and saving plan.

*In some cases it is possible to purchase a service contract which provides additional coverage for the cost of repairs, once the warranty has expired. Read every contract carefully before buying, as prices and benefits will vary.

SPENDING PLAN FOR HOUSEHOLD EQUIPMENT

For the Period from _____ to _____.

Total amount of money available to spend for household equipment and servicing:

$_____.

EQUIPMENT PURCHASES	ESTIMATED COST	ESTIMATED DATE OF PURCHASE	AMOUNT OF SET ASIDE EACH PLANNING PERIOD
MAJOR APPLIANCES			
PORTABLE APPLIANCES			

OPERATING AND SERVICING COSTS	ESTIMATED COST	ESTIMATED FREQUENCY	AMOUNT TO SET ASIDE EACH PLANNING PERIOD

Should You Use Cash Or Consumer Credit?

The method of payment is an important consideration in managing your equipment dollars. Generally, you have the choice of paying cash or using consumer credit.

Cash is the least expensive method of payment since there are no finance charges involved. Paying cash offers greater opportunity for comparison shopping and taking advantage of discounts. In addition, it allows full use of future income and freedom from monthly credit payments. However, if you do pay cash, you must have the money on hand or anticipate purchases in time to save the needed amount.

During the life cycle, peak demands on individual and family income seldom coincide with peak earning periods. The need and desire for appliances that require a large cash outlay are greatest when the family is growing, and often it is difficult for consumers to save the necessary money in advance for certain items. Therefore, many individuals and families find it convenient and practical to use consumer credit, providing they can fit the payments into their overall spending and saving plan.

Consumer credit* allows the borrower to meet current needs and wants through use of future income. Using credit also offers conveniences such as shopping without carrying cash, a record of spending, ordering by phone, advance notice of sales, obtaining goods on approval, taking advantage of low prices that may occur when you have little or no cash on hand. Although credit allows you to use goods and services as you pay for them, there is a charge for credit in addition to the cost of the item purchased. Therefore, once you decide to use consumer credit, it is important to shop for it as you would shop for other goods and services. Credit costs vary with the item being purchased, the risk involved, the services offered, and the source of credit.

In the United States, the federal Consumer Credit Protection Act, commonly known as Truth in Lending, requires merchants and lenders to state finance charges in terms of dollar amount and annual percentage rate. Most Canadian provinces have a similar law. By shopping around and comparing credit charges and services, you will find the source that best fits your needs and your financial situation.

To use consumer credit wisely you should 1) know the different kinds of credit, 2) know the cost involved, 3) find out the services offered, and 4) understand the terms of your credit contract. An essential rule in using any type of consumer credit is to purchase only those items which you know can be comfortably paid for out of monthly income. Individuals or families who take on more credit obligations than their spending plan will allow are inviting financial problems. Therefore, be sure that you have planned adequately to meet expected expenses and provided for the unexpected . . . that income will continue . . . that expenses are not likely to increase . . . that the repayment period does not exceed the life of the item purchased on credit.

To protect your own interests, remember to fulfill your responsibilities in using credit and deal only with lenders and sellers who take their responsibilities in granting credit seriously.

*MANAGING YOUR CREDIT, listed on page 40, provides a complete and objective guide to understanding consumer credit and managing credit dollars.

Check Home Facilities

When buying a major appliance, thoroughly analyze installation and operation requirements for space, electric wiring, gas and water. Try to plan equipment purchases to fit the facilities in your home. If changes are necessary to make the kitchen or laundry area more convenient, or if you are considering built-in appliances, plan carefully so that all changes can be made at one time. It is always costly to adjust cabinets and counters, electric outlets, and gas and water connections.

Space for major appliances should provide proper ventilation . . . room to open doors and drawers . . . adequate window and electric lighting . . . easy access to the motor and parts for servicing. Before shopping, measure the exact height, width and depth of available space and the dimensions of surrounding cabinets and counters.

Check with retailers to see copies of manufacturers' specification sheets for exact equipment dimensions and instructions for installation of appliances. In the United States, the Underwriters' Laboratories, Inc. and the American Gas Association have established safety standards for products; in Canada, the Canadian Standards Association and the Canadian Gas Association have established similar standards.

Electric wiring in most cities and towns must meet certain safety requirements. In the United States, the National Electrical Code or local electrical ordinances have established safety standards. In Canada, the Canadian Electric Code and Canadian Standards Association have similar standards. If you question the wiring in your home, consult your utility company or a reliable electrical contractor. Today's *adequately wired* home should have the following electrical capacity:

- three wire service entrance conductors with a minimum capacity of 100 amperes. A service entrance with a capacity of 150 to 200 amperes is recommended for homes with central air conditioning and/or electric heating.
- a main service panel with a capacity comparable to that of the service entrance conductors
- enough branch circuits of sufficient capacity to deliver ample power to outlets for lights, appliances and certain individual major appliances
- fuses or circuit breakers of correct capacity for each branch circuit to protect against overheating due to an overload or a short circuit
- ample number of outlets and switches for connecting and controlling lights and appliances

These symptoms may show *inadequate wiring*:

- a shortage of convenience outlets, resulting in excessive use of extension cords and multiple connections
- dimming lights, poor radio or television reception when appliances are used
- heating appliances (toasters, frypans, irons, heaters) that warm up slowly
- motor-driven appliances that frequently overheat
- fuses that blow or circuit breakers that trip frequently

The chart on the next page explaining the distribution of circuits in an average-sized home shows kinds of circuits . . . the lighting and equipment they service . . . the minimum number and size of circuits . . . maximum wattage that can be safely carried on a circuit at one time.

RECOMMENDED DISTRIBUTION OF MINIMUM CIRCUITS IN AN AVERAGE-SIZED HOME

(Adapted with permission of the Electric Association, Chicago, Illinois)

KINDS OF CIRCUITS	TO SUPPLY POWER FOR	YOU SHOULD HAVE	POWER PROVIDED
General Purpose	lighting outlets throughout the house and some convenience outlets for television, radio, vacuum cleaner, clocks, bed coverings, etc.	one 15-amp circuit for each 375 square feet of floor area (No. 14 wire) OR one 20-amp circuit for each 500 square feet of floor area (No. 12 wire)*	1800 watts (15 amp x 120 volt) 2400 watts (20 amp x 120 volt)
Portable Appliance	convenient outlets for portable electric appliances, water conditioning equipment, and refrigerator to serve kitchen, dining and laundry areas	at least two 20-amp 120-volt circuits or one three-wire split, 20-amp 240-volt circuit for the kitchen; at least one 20-amp 120-volt circuit for the laundry	2400 watts each (20 amp x 120 volt) 4800 watts (20 amp x 2X 120 volt)
Individual Equipment	electric range, automatic washer, clothes dryer, water heater, some room air conditioners, dishwasher, disposer, freezer**	one circuit for each piece of equipment	wattage depends on individual appliance

* In Canada, only 15-amp circuits are used for general purposes and the number of circuits is determined according to usable wall space. For example, no point along the floor line of usable wall space is more than six feet from an outlet.

** The electric range, clothes dryer, water heater, some room air conditioners, and central air conditioning must each be connected to a separate 240-volt circuit. The other appliances on individual circuits require 120-volt service.

To prevent overloading, total the wattage of all appliances you use on one circuit. You will find the wattage on appliances bearing the UL symbol (Underwriters' Laboratories, Inc.) in the United States or in Canada, on appliances marked CSA (Canadian Standards Association). Remember, not more than 80 percent of the total circuit wattage capacity should be used at the same time. Major appliances usually should be on individual circuits. If your electrical power is not the normal 60 Hertz (cycle) AC current, be sure the appliances you purchase will operate on what you have.

Natural, manufactured and mixed gases are distributed from a central system by the utility company and require no home storage facilities. Gas flows from a main into a small lateral pipe that runs into your home. Liquefied petroleum is delivered in cylinders that are stored outside your home in an outer jacket or are buried underground.

The water supply in your home should be adequate in amount, temperature, softness and pressure. If you do not have adequate hot water for water-using appliances, you may need a booster, a larger water heater, or two medium-sized water heaters near the laundry and kitchen. If the water supply is hard, investigate softening methods. (See pages 25-26.)

Effective operation of an automatic clothes washer, dishwasher or water softener requires hot and cold water pressure of at least 20 pounds per square inch. Normal city water pressure ranges from 20 to 100 pounds per square inch. If pressure falls below this level, you may need appliances with a meter water-fill mechanism. If pressure is too high, it may be necessary to install a pressure regulator. A plumber or water utility official can advise you.

Consider Requirements For Safety

Safety is important when buying and using equipment. To provide the greatest measure of safety, follow manufacturers' instructions for installation, use and care . . . keep equipment in good repair . . . find a qualified serviceman to make plumbing, electrical and gas connections and take care of necessary repairs.

When buying equipment, look for seals which indicate that appliances meet safety standards. Refer to the following chart for help in identifying specific seals.

SEALS INDICATING SAFETY

THE SEAL	WHERE IT IS FOUND	WHAT IT MEANS
American Gas Association	on gas accessories or appliances such as ranges, heaters, clothes dryers	A prototype has been tested by A.G.A. and certified for conformity to standards of the American National Standards Institute. Factory inspections of current production occur at least annually to monitor continued conformity.
Canadian Gas Association	on the majority of gas appliances manufactured in Canada	Appliances have met Canadian Standards for gas equipment.
Canadian Standards Association	on electrical, gas or oil equipment and plumbing brass; on general products certified to show conformity with quality and performance standards	Products have passed CSA tests and periodic factory inspections in accordance with CSA Standards for Safety.
Underwriters' Laboratories, Inc.	on appliances, equipment and materials which could possibly be fire, electric or accident hazards, or used to stop the spread of fire	Products have passed original laboratory tests and periodic factory tests and examination in accordance with UL Standards for Safety.

Most household equipment will receive considerable use and should be durably constructed. The following checklist can help you judge the safety of materials and construction features on major and portable appliances.

CHECKLIST FOR SAFETY

- __ safety locks on self-cleaning ovens, microwave ranges, trash compactors
- __ doors that can be pushed open from the inside of refrigerators, dryers and freezers to prevent children from being trapped inside
- __ easy-to-read controls and signal lights to help eliminate burns and remind users to turn off surface units, burners and ovens when not in use
- __ switches to automatically stop action of washers, dryers and dishwashers when door or cover is opened
- __ shelf supports in refrigerators that prevent shelves from being pulled out accidentally
- __ three-pronged grounding plugs on stationary and portable appliances especially those to be used outdoors and in damp places (but not on toasters and other open-coil heating appliances)
- __ control knobs that are beyond the reach of children or cannot be turned on accidentally
- __ "off" controls that are clearly indicated, especially on portable appliances
- __ heat-resistant handles and legs on portable heating appliances that are firmly attached and strong enough to support weight of appliance; also, heat shields to protect surfaces
- __ smooth corners, good balance, and parts that fit well

Be A Smart Consumer

General shopping skills should be used when shopping for appliances. Planned, thorough techniques enable you to make purchases that will give years of service and satisfaction. The following 10 points may help you become more knowledgeable when you shop for household equipment.

1. **Know how much you can afford to spend.** Be aware of prices and stay within the range indicated in your spending plan. (Refer to page 9.)

2. **Buy the model best suited to your needs.** Appliances should be easy to use . . . economical to operate . . . simple to service . . . easy to clean and condition . . . well-constructed . . . versatile . . . attractive in appearance . . . generally satisfactory to you.

3. **Gather helpful buying information.** Look for information on appliances you plan to buy in magazines, newspapers, advertisements and consumer information publications. Consult appliance manufacturers, government extension services, trade associations, utility companies, etc.

4. **Read labels, hang tags, and seals.** Find out the manufacturer's name . . . who certifies the product . . . what the certification includes . . . tests made and the results. Keep labels and hang tags in a safe place for future reference. (See page 14.)

5. **Ask to see specification sheets and folders.** These materials give detailed information about finishes, dimensions, construction, special and safety features, use, performance and care of equipment.

6. **Look for operating instructions.** Instruction booklets help you locate and use equipment controls. Ask the salesperson for demonstration of correct use and care of equipment.

7. **Check the terms of guarantees and warranties.** These terms are usually stated in the instruction manual. Know what is covered, what you must pay for (parts, labor, service), how long the warranty is effective, and whether you must buy the appliance and service from an authorized dealer or distributor to receive warranty benefits.

8. **Know store policies and procedures.** Reliable businesses give estimates on installation costs and servicing . . . install equipment properly and efficiently . . . are fair in policies regarding service and replacement of parts.

9. **Compare prices and values in several stores.** The same appliance may sell at different prices in different stores. Remember, stores offering services such as credit, delivery, installation, etc., may charge more. Shop around until you know which stores offer the merchandise, prices and services you want. Since time is a resource, check newspaper and magazine ads, catalogs and phone information to make shopping easier.

10. **Learn to complain effectively about poor performance and service.** Notify the retailer or manufacturer of your dissatisfaction and fully explain your complaint.*

*In the United States, if a problem develops which the retailer or manufacturer cannot resolve, contact **MACAP** (Major Appliance Consumer Action Panel). **MACAP**, which acts upon complaints received from owners of major appliances, consists of a group of independent consumer experts. Sponsored by the Association of Home Appliance Manufacturers and the National Retail Merchants Association, **MACAP** will study your problem and make a recommendation for solution. In Canada, contact the Canadian Appliance Manufacturers Association.

Buying Guides For Equipment

What jobs will the appliance successfully perform? Is it easy and convenient to use? How important is saving your time and energy? Do personal responsibilities or interests make the purchase necessary? Have you considered operating costs? Can you fit the expense into your spending plan? These are some questions you need to ask before buying any major or portable appliance.

There are a number of appliance models in each manufacturer's product line which perform the same basic functions but vary in extra features and price. You can make the choices that best meet your needs if you consider major factors that apply to specific equipment. The following sections present guidelines for buying major and portable electric appliances.*

*Room air conditioners and central air conditioning are discussed in YOUR HOUSING DOLLAR, listed on page 40.

Major Kitchen Appliances

Your plan for a well-equipped kitchen will begin with a range and refrigerator or refrigerator/freezer. These are basic appliances in every home and should be selected with present and future needs in mind. Additional kitchen appliances that offer convenience and save your time and energy include the freezer, dishwasher, food waste disposer, and trash compactor.

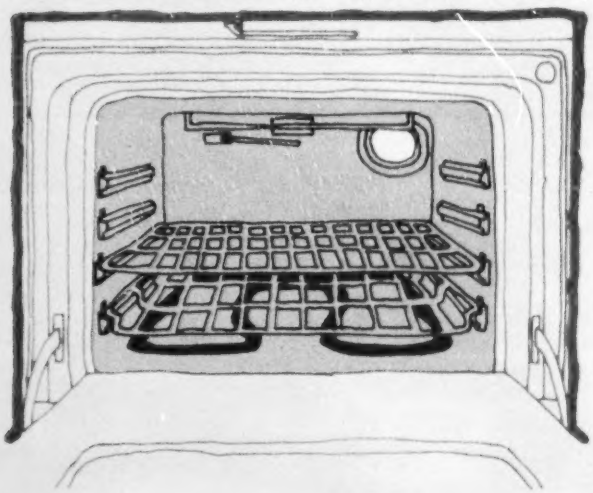
RANGES

A wide variety in models and styles of both gas and electric ranges is available today. Since the range is an appliance you will use often and for a long time, it is to your advantage to shop carefully to find the model that best meets your needs.

There are two types of ranges. Your selection will depend on the range's suitability to your kitchen. Freestanding ranges are fully finished and stand independently. They consist of surface units or burners, oven and broiler and offer the widest variety in size, color, price and features. Built-in ranges may be lower in initial cost because fully finished side panels are unnecessary; however, building or remodeling expenses may be involved.

Depending on the amount of money you plan to spend, you may choose a range with automatic cleaning and/or microwave features.

Automatic oven cleaning is available in two systems—self-cleaning and continuous cleaning. The self-cleaning oven literally burns up soil with controlled high heat. No chemicals are used. A continuous cleaning oven has a special catalytic coating on surface walls. The chemical oxidizes stains at normal baking temperatures, causing soil to gradually fade. A continuous cleaning oven is less expensive to buy and operate and keeps an oven presentably clean during normal cooking. The self-cleaning system requires a special cycle for cleaning; thus, uses more energy.



Microwave ovens are found on top-of-the-line models or as portable countertop units that operate on an individual, standard 115-volt circuit with grounding. Microwave or high-frequency energy generates heat within the food which dramatically reduces cooking time.

Test results show that microwaves use substantially less energy than traditional ranges to cook many food products. The U.S. Food and Drug Administration considers those ovens that comply with the Federal microwave oven standard to be safe, provided that users follow manufacturers' operating instructions. All ovens now manufactured must bear a precautionary label, permanently attached in a prominent place, that will help users avoid excessive exposure to microwave energy.

Another energy-saving alternative to the conventional oven is the convection oven. Because heat is continually recirculated throughout the oven chamber by a power-driven fan, it is possible to cook foods at lower temperatures for shorter periods of time. The convection oven, unlike the microwave, does not require special equipment or additional cooking time for large quantities of food.

To buy a range that will give you lasting satisfaction, carefully weigh the following points.

- **The cooking capacity you need.** Your range needs will be determined by the size of your family and the amount of surface cooking, baking and broiling you do. Surface units or burners on ranges most often are available in groups of four in various arrangements and sizes. Ranges can be equipped with one or two ovens that can vary in size. Separate ovens may be inserted into the wall wherever suitable space is available. Broiler burners or units are located within ovens or in separate compartments. A few are constructed to broil both sides of the meat at the same time.

- **The construction you want.** Examine the outside finish, oven and broiler for service and durability. The controls should be easy to read, reach and adjust. Splash panels should have smooth corners to facilitate cleaning.

• **The features you value.** Since most special features add to the cost of a range, evaluate them in terms of their usefulness to you. On the next page are some of the features found on modern ranges. Decide which ones you really need and take the completed checklist with you when you shop.

To save your time and energy

_____ removable doors and control knobs, lift-up cooktops, removable or disposable oven liners for easier cleaning

_____ self-cleaning oven or continuous cleaning oven

_____ high speed surface units on electric ranges

_____ thermostatically controlled surface units or burners

_____ automatic clock that can be preset to turn oven on and off, change cooking temperature to a preset holding temperature, and control appliance outlet

_____ hood and/or vented exhaust system to remove grease and odors from cooking area

_____ microwave oven

_____ convection oven

To give added safety

_____ automatic pilot lighting for top, oven and broiler burners on gas ranges

_____ indicator lights to show when any unit is on

To give added convenience and/or eye appeal

_____ storage space for utensils

_____ rotisserie attachment

_____ surface griddle

_____ electric clock, light and appliance outlet

_____ automatic meat thermometer

_____ low-temp oven control

_____ glass oven door panel

_____ smooth ceramic cooking surfaces

REFRIGERATORS

Changes in cooking and shopping habits as well as the number of new foods on the market requiring little at-home preparation may influence your refrigerator needs. Many convenience foods require refrigeration or freezing, increasing the need for an appliance with a capacity for larger quantities of food. There are two types of refrigerators—conventional and combination models.

The conventional refrigerator provides storage for fresh and frozen foods. The frozen food compartment is enclosed across the top of the unit with a lightweight inner door. It maintains temperatures around 15° F. and is suitable for freezing ice cubes and short-term storage of frozen foods. The temperature is not low enough to rapidly freeze unfrozen foods or to store frozen foods for more than a few weeks.

A conventional refrigerator may be your best choice if you can fit the price into your spending plan more easily than that of a combination model, or if you have a separate freezer. Some conventional refrigerators are available without frozen food compartments. Small capacity one-compartment refrigerators also are available to use as extra refrigerators in family rooms and vacation homes.

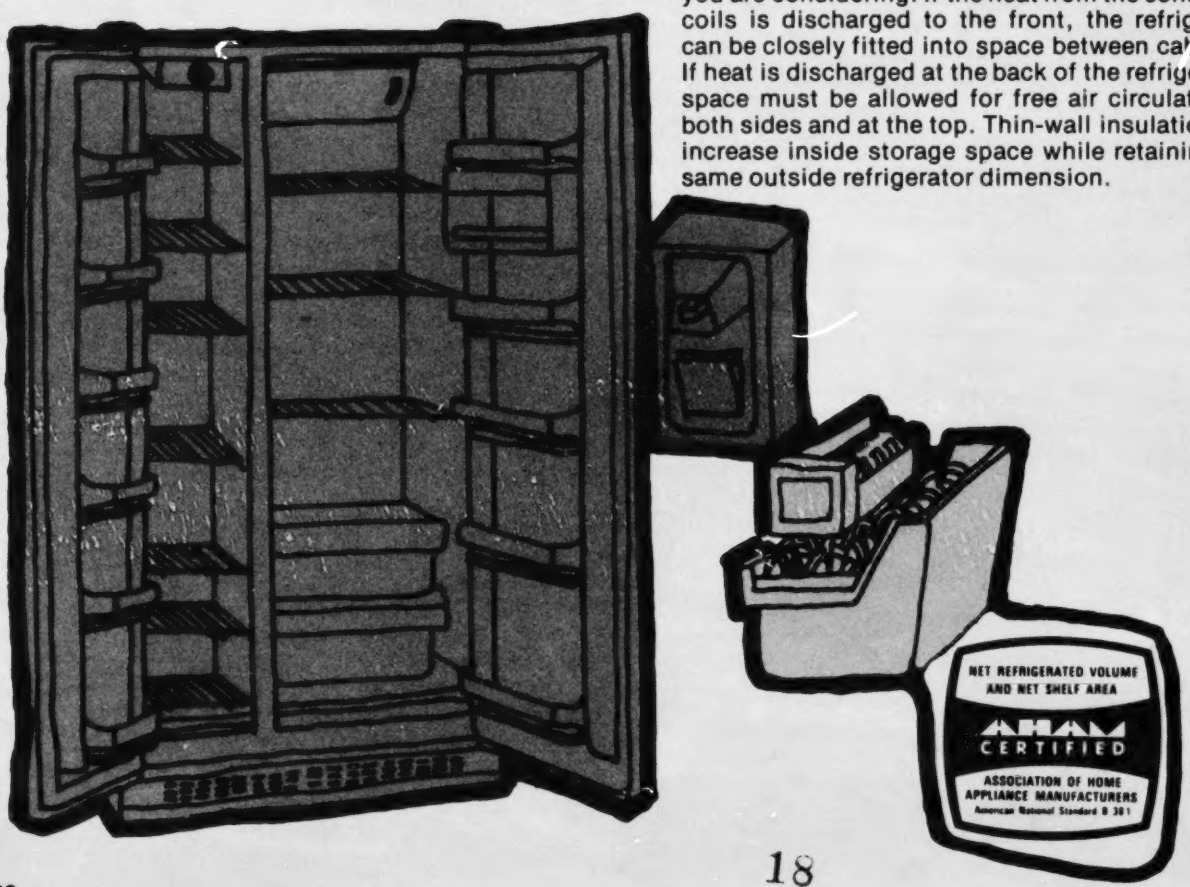
The combination refrigerator/freezer provides space for the storage of fresh foods, freezing and long-term storage of frozen foods. Combination models have two outer doors—one for the freezer and one for the refrigerator. Some top-of-the-line combination models provide separate controls for the refrigerator and freezer compartments. Temperature in the freezer should be maintained at 0° F. The freezer section may be at the top, side or bottom of the refrigerator. Most combination models provide refrigeration space with high humidity for storage of fresh fruits and vegetables.

A combination refrigerator/freezer may be your best buy if you have no separate food freezer, have need to store frozen foods longer than one or two weeks, and can afford the higher price and operating cost of a combination model. Remember, the new combination models usually cost considerably more to operate than an older model because they generally are larger, have lower freezer temperatures, and have forced air circulation with fans and heaters for automatic defrosting.

Refrigerators are available in a wide variety of freestanding and built-in models. Freestanding models can be installed by merely connecting the appliance and allowing necessary space needed to open the door. Built-in units may be stacked on the top of or inserted under the counters. While these may take less space than freestanding models, they are usually more costly to install and may be difficult to move or adjust once they are placed. Consider the following points before you buy.

- **The storage capacity you need.** The storage capacity you need depends on the size of your family, how frequently you shop, the amount and type of food you plan to store, and the size and shape of food containers you will place in your refrigerator. Storage for fresh food should be approximately nine cubic feet for a family of two, one cubic foot for each additional family member plus two cubic feet for entertaining needs. Freezer space should be approximately two cubic feet per family member unless you have a separate freezer. In the United States, look for the Association of Home Appliance Manufacturers' (AHAM) Certification Seal on refrigerators and freezers for industry conformity to the method for measuring appliance capacity.

- **The space you have.** Check the space you have available against the dimensions of the refrigerator you are considering. If the heat from the condenser coils is discharged to the front, the refrigerator can be closely fitted into space between cabinets. If heat is discharged at the back of the refrigerator, space must be allowed for free air circulation at both sides and at the top. Thin-wall insulation can increase inside storage space while retaining the same outside refrigerator dimension.



• **The operation you want.** The efficient operation of your refrigerator depends upon maintaining proper temperature, air circulation, and humidity. Refrigerators have been developed with different compartments with proper temperatures and humidity for various types of food. Models with automatic defrost or no-frost features are popular. However, these features increase operating costs.

• **The construction you want.** Both refrigerators and refrigerator/freezers must be well-built to give lasting service. Look for construction features that provide lasting outside finishes and inside linings, moisture resistant insulation, easy-to-clean shelves and drawers, tight-fitting doors, convenient controls.

• **The features you want.** Judge the following features in terms of usefulness and cost to you; then, check which ones you really need and want.

To save your time and energy

_____ frost-free operation

_____ automatic defrost

_____ automatic ice maker and ice and water dispensers which require hookup to water supply

To add to efficient and economical operation

_____ special storage areas for different kinds of foods

_____ seasonal control

_____ foam insulation

To offer convenience and/or eye appeal

_____ interchangeable door swing

_____ decorator colors

_____ door shelves

_____ adjustable slide-out or roll-out shelves; roll-out casters

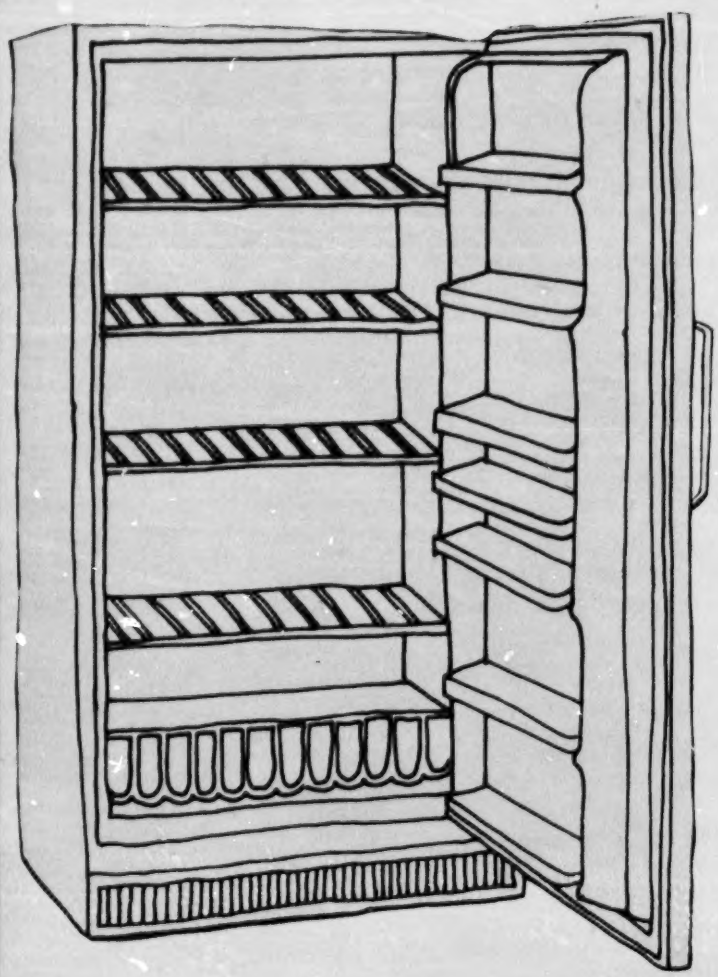
_____ side-by-side styling of refrigerator/freezer combination

FREEZERS

While it offers you an opportunity to practice economical food buying and preparation, the freezer is not basically a money-saving appliance. Remember, the cost of owning and operating a freezer includes buying commercially frozen foods to put into it. You gain the most value from a freezer if you . . . freeze home-grown and home-prepared foods . . . buy fresh foods for freezing when they are in season or on sale . . . stock up on commercially frozen foods when they are on sale . . . freeze leftovers for later use . . . keep enough frozen foods on hand to reduce your trips to the store . . . use your freezer extensively.

Freezers are available in upright and chest models. Since both types operate equally well, your choice depends on personal preferences and the space available. The upright freezer usually is more expensive than the chest type freezer. It is available in freestanding models or may be built into the wall or inserted above or below counter tops. It requires less floor space than a chest freezer but may require a stronger floor since the weight is concentrated into a smaller area. If not frost-free, upright models may require more frequent defrosting, but are easier to defrost than chest freezers. The chest freezer is available in freestanding models and requires clearance above it to open the door as well as more floor space than an upright model. The chest freezer generally requires less frequent defrosting but is not available with frost-free features. The following points may help you select a freezer that suits your needs and wants.

• **The storage capacity you need.** Modern freezers provide from four to thirty-one feet of freezer space. The amount of space you need depends on the size of your family . . . the type of food you plan to freeze . . . the number of times you shop for food . . . and your present as well as future requirements. You may want to allow approximately three to four cubic feet per person if you live in an urban area and shop weekly; five to six cubic feet if you live in a rural area, shop less frequently, and have your own home-grown foods to freeze. Avoid buying more space than you need since the cost of owning a freezer is lowest when spread over a larger food volume.



Freezer features

_____ a warning signal to indicate a rise in temperature or a power failure

_____ an interior light

_____ solid fast-freeze surfaces cooled with coils directly beneath them

_____ removable racks, trays or baskets for food storage

_____ automatic defrost or nonfrosting operation

_____ built-in lock

_____ door stop

_____ push-open doors

_____ warranty against food spoilage through mechanical failure

• **The construction you want.** Both chest and upright freezers should provide a constant temperature of 0° F. with a lower temperature in a separate fast-freezing compartment. Doors must have a good seal with counterbalance hinges on chest freezers to hold the lid open.

• **The features you value.** Study the following features and decide which ones you really need.

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DISHWASHERS

The automatic dishwasher increases sanitation and reduces meal clean-up time. It can help you keep the kitchen orderly since dishes can be stored in the dishwasher prior to washing. The kind you need depends on the number of family members, the numer of meals you prepare and serve daily, and how often you entertain.

There are two basic types of dishwashers. The built-in model may be installed as an under-counter unit and requires special cabinet arrangement and plumbing connections. The top- or front-loading portable dishwasher is not permanently installed but can be temporarily attached to any faucet and drain when in operation. Some front-loading models may be converted to permanent installation. When selecting a dishwasher, consider the following points.

- **The water supply available to you.** Efficient operation of an automatic dishwasher requires from 7 to 13 gallons of hot (140° F.) water per load . . . water pressure of approximately 15 to 125 pounds per square inch. (See page 27.)

- **The construction you want.** The construction of a serviceable dishwasher should provide durable interior finishes, flexible use of racks for convenient placement of different utensils, and well-placed controls.

- **The features you value.** Following are some of the features found on modern dishwashers. Decide which features you really need.

Dishwasher features

_____ cycles for rinse and hold, prewash, regular wash, heavy or longer wash, plate warming, drying, sanitizing, energy-saving

_____ adjustable loading racks to hold odd-shaped utensils and standard dishes and cookware

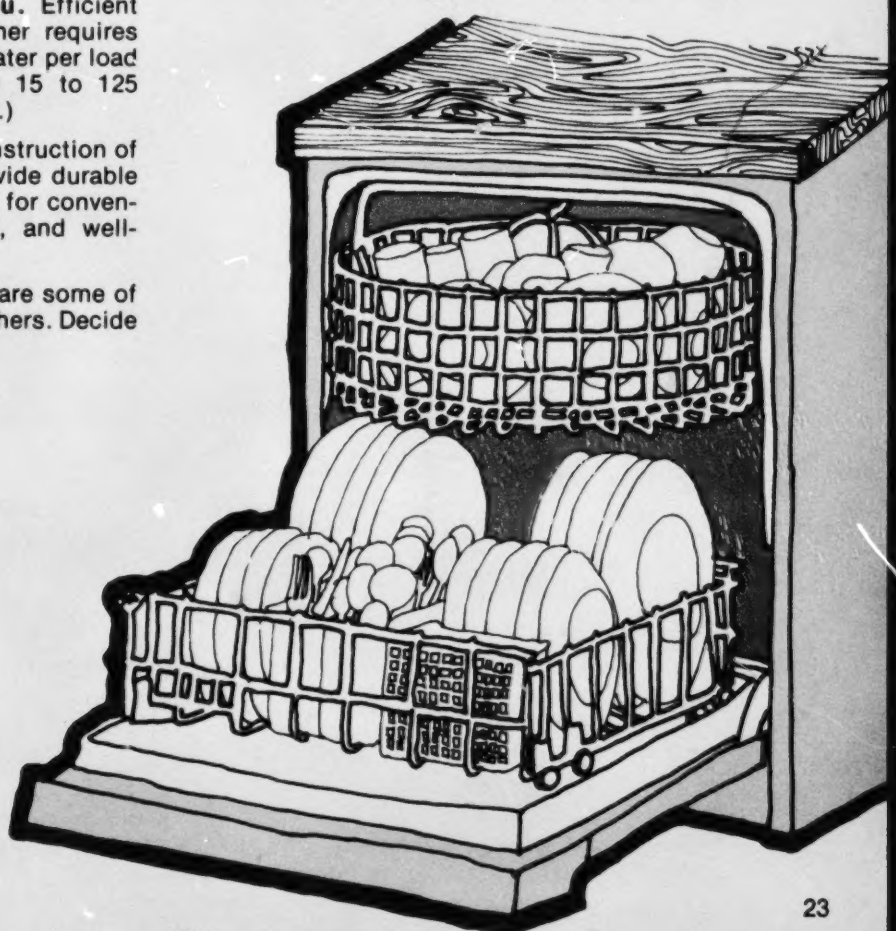
_____ hot water booster or heating element to keep the water hot throughout the cycles

_____ insulation to deaden sound

_____ built-in food waste disposer or filter to dispose of small quantities of soft food and eliminate hand rinsing

_____ compartments for small items

_____ wood cutting board on portables



FOOD WASTE DISPOSERS

A food waste disposer is an electrically-driven grinding unit that generally destroys all vegetable parings, fat and grease, small bones, and other food waste. Food waste is emptied through the sink into a hopper where it is shredded. While the disposer is in use, cold water must be running to carry waste down the drain and harden grease so that it can be broken up.

There are two types of food waste disposers. The continuous-feed unit disposes of large quantities of food waste through continuous feeding action. It is more expensive to install since it operates by a separate switch. The lock-feed or batch-feed model is operated by a cover that starts the disposer when turned to the lock setting and water is running at a certain speed. It disposes of only a certain amount of waste at a time—usually from one and one-half to two quarts. This model offers more safety because nothing can be accidentally dropped into the unit while it is in operation. Before making your choice, consider the following points.

- **The regulations concerning disposers.** Some cities and areas forbid the use of a food waste disposer while others require them.
- **The requirements for installation.** Installation requires the services of an electrician and a plumber. If you have a disposer and dishwasher, an individual appliance circuit with a 20-ampere fuse is recommended.
- **The cold water supply.** Food waste disposers require a cold water flow of two to three gallons per minute and use one and one-half to two gallons of water daily per person.
- **The features you value.** Check features you want in a food waste disposer.

_____ a circuit breaker or automatic reset switch to prevent overloading and overheating the motor

_____ sound shield insulation

_____ stainless steel grinding chamber to eliminate corrosion

_____ provision for dishwasher connections

_____ powerful 1/3 to 1/2 horsepower motor

_____ a self-releasing reverse switch to unclog jammed blades

TRASH COMPACTORS

A trash compactor is designed to reduce the volume of household trash through compaction. Generally, the same items that you put in a trash basket can be placed in the compactor, but not food wastes.* All compactors have a safety lock mechanism to prevent opening the machine during operation.

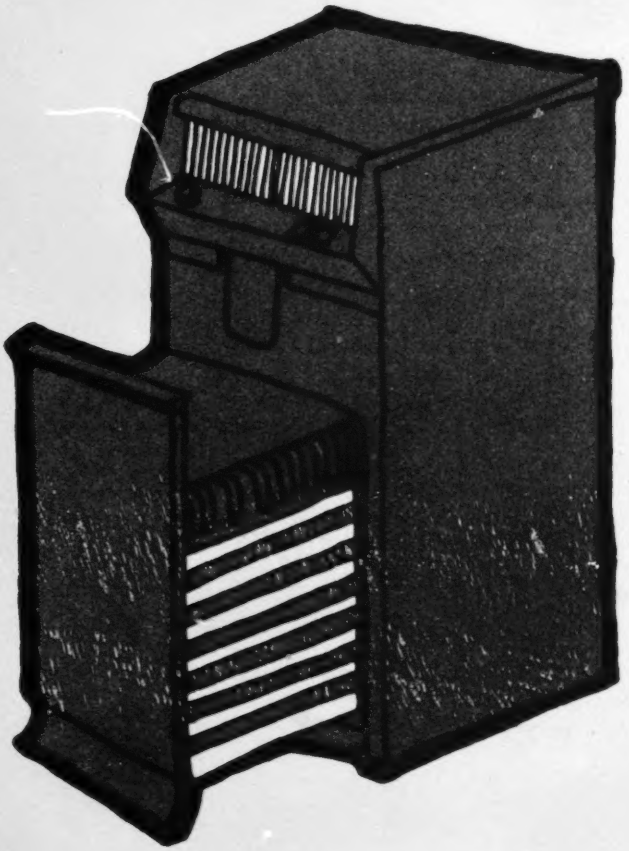
There are two types of compactors. In the drawer-loading unit, the bag for trash disposal rests in a drawer which pulls out the front of the compactor. To unload, the bag must be lifted out of the container and discarded. In the front-loading unit, there is a side opening or tilting door that gives access to a removable compaction chamber which is lined with a bag. To unload, the compaction chamber may be pulled out and the entire chamber taken to discard the contents.

Compactors are available in freestanding or built-in models and can fit wherever you have the space—in your kitchen, garage or utility room. Consider the following points before purchasing a compactor.

*The incinerator, available in indoor and outdoor models, is an appliance which consumes food waste and trash with the exception of tin cans, other metals, and glass by burning it. Check city or area regulations concerning incinerators before installing one in your home.

- **The capacity you need.** For an average family, a compactor may hold one week's accumulation of trash. Larger families might use one and one-half or two bags a week. The capacity is generally stated in cubic feet or gallons of compacted waste.

- **The construction you want.** A trash compactor should have exterior surfaces which are durable and easy to clean; interior surfaces should be corrosion resistant and designed for unexpected abuse. Deodorizing and disinfectant capabilities may be important considerations, depending on the trash compactor's location in your home.



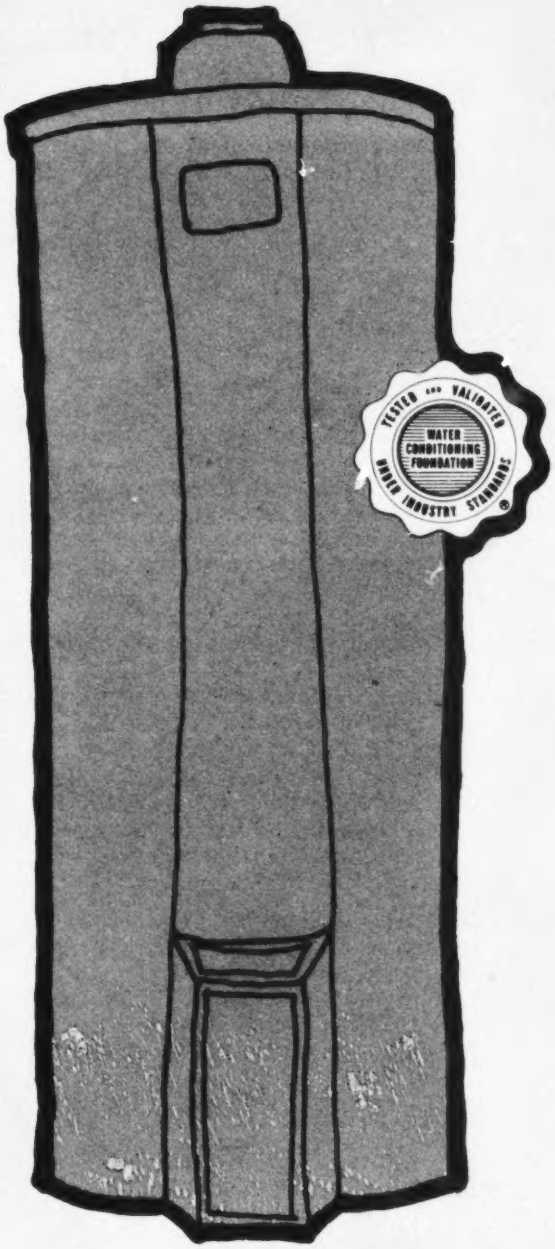
Water Softening Equipment

Soft water is beneficial to satisfactory operation of water-using equipment as well as personal use. Some of the benefits of soft water are more efficient cleaning with soaps and detergents and less plumbing repairs. If you live in a hard water area, you may need a water softening unit to remove the hardness minerals from water.

A water softening unit has a bed of permanent softening materials. As water flows through the bed, calcium and magnesium are retained and sodium is released. Depending upon the hardness of your water, the softening material must be regenerated periodically with a supply of common salt. You can contract a soft water service that includes installation of a softening tank as well as regular regeneration or replacement. Or, you can rent a water softening unit which may be less expensive than the service that includes regeneration. Usually, it is more economical to buy a unit if you own your home.

Water softening units are available in four types, ranging from fully automatic to manual. The fully automatic unit regenerates itself automatically by a preset clock timer or upon unit demand determined by probe sensors. The regular automatic unit begins the regeneration process at the push of a button or flick of a switch. The semiautomatic and manual units require your attention for regeneration. Consider the following points before you purchase a water softening unit.

- **The softener capacity.** The size water softening unit you need depends on the amount of water your family uses per day and the hardness of the water supply. Softening units are rated in terms of grain capacity (10,000, 45,000, 60,000 or 90,000 grains), which is the quantity of minerals removed



from water between regenerations. (To know how many gallons of water can be softened between regenerations, divide grain capacity of the tank by grain hardness of the water. For example, a 60,000 grain tank will soften 6,000 gallons of ten grain water between regenerations. The softener should operate around 2/3 of its maximum capacity rating to realize maximum efficiency.) In the United States, look for the Gold Seal of the Water Conditioning Foundation which indicates that the softening capacity of the softener has been validated at various salt dosages and equipment conforms to industry standards.

- **The hardness and iron content of water in your area.** Water hardness is stated in grains per gallon or parts per million. (Divide parts per million by 17.1 to convert to grains per gallon.) If the water in your area has more than 3 grains hardness, it should be softened. Water can be analyzed by a county extension agent, local municipal authority, or dealer. Iron in the water may rust or stain fixtures. Sometimes iron may be treated by softening the water. However, if the iron concentration is high, you are likely to need an iron filter in addition to a water softener.

- **The cost of installation.** Installation costs depend on the original plumbing layout. Softening units should be installed in the household water line before the water heater to provide softened cold and hot water taps for household use. Outside taps and lawn sprinklers should be by-passed.

- **The construction of the water softening unit.** Look for water softening units that are easy to clean, have controls that are easy to operate, and have special filters, if needed, for particular problems such as iron, manganese or hydrogen sulfide in the water.

Water Heating Equipment

You may need a new or additional water heater if the supply of hot water in your home does not meet your needs. Both gas and electric water heaters are available.* Gas water heaters have a burner located below the water tank. A vent or flue for the removal of combustion gases to the outdoors is required. Electric water heaters have a heating element near the bottom of the tank and most models have a second element near the top. These insulated, tubular elements are inserted through the wall of the tank into the water. Before you buy a heater consider the following points.

- **The water heater capacity.** The capacity you need depends largely on the tank size (the number of gallons of water it holds) and on the recovery rate (the number of gallons of water that can be heated in one hour). A water heater with a fast recovery rate does not need as large a storage tank to provide adequate amounts of hot water. However, it should be large enough to hold the amount of hot water that may be needed at one time. Utility companies, a plumber, or dealer can help you estimate the water heater capacity you need.

- **The amount of hot water you need.** Your hot water use depends on the size of your family, their water-using habits, the water-using appliances in your home, and the amount of hot water you are likely to want to use at one time. To estimate your needs, allow between 10 and 20 gallons per person per day. Add the number of gallons required per day to operate your clothes washer and/or dishwasher. Calculate the total number of gallons that might be needed at one time during normal household usage.

- **The temperature control on the water heater.** Most water heaters have temperature controls that can be set for water temperatures up to 160° F. for automatic washers and dishwashers.

- **The location of the water heater.** Since heat is lost as water passes through pipes, the water heater should be installed as near as possible to the appliance using the most hot water. It may be advisable to have one water heater at a high temperature setting for dishwasher and washer and another unit to serve faucets. Consult the local utility company or a master plumber to be sure the water heater is correctly installed.

- **The most suitable tank for the water supply.** Soft, acid water can shorten heater life by corrosion. Hard water can cause lime deposits which may increase fuel costs and shorten the life of the heater. Ask a dealer about the tank lining most suitable for water in your area.

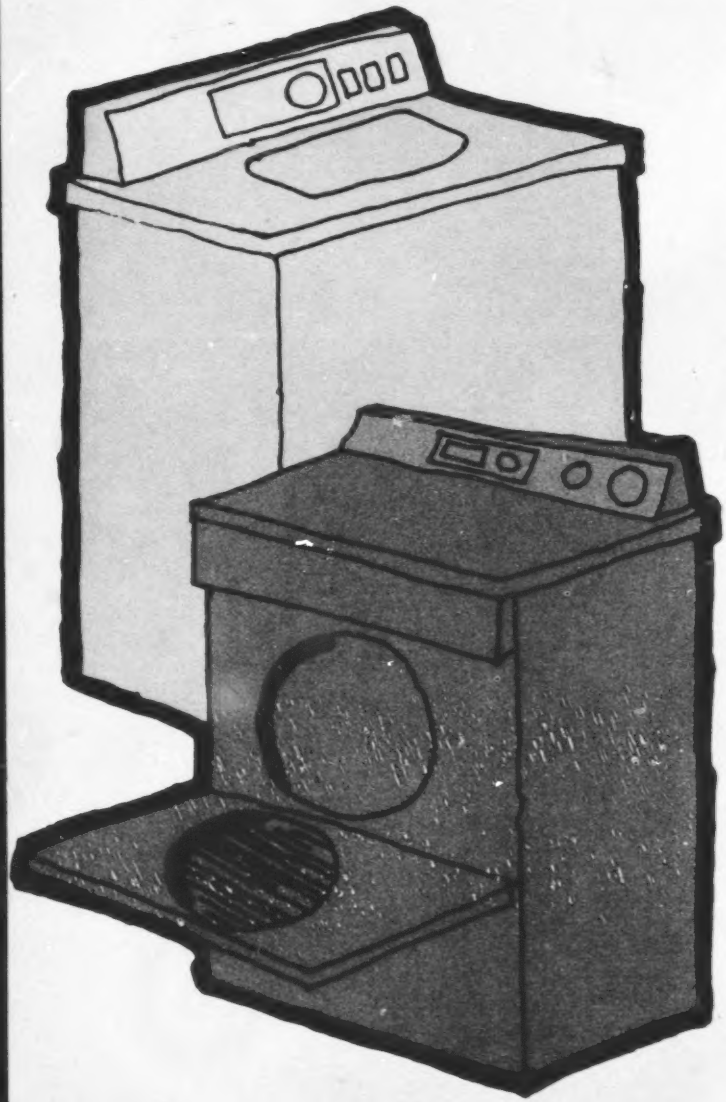
- **The safety features of the water heater.** All water heaters, both gas and electric, should have a factory installed Energy Cut Off (ECO) device. This device will operate to shut off the supply of energy whenever an unsafe condition is starting. Also, upon installation of the water heater, a pressure and temperature relief valve should be installed. Your local plumbing contractor can help you with the size and type required by your local codes.

- **The construction of the water heater.** Most water heaters have a storage tank of steel coated with zinc or a tank lining of porcelain enamel or cement. An insulation of rock wool or fiberglass one to three inches thick is desirable.

*In Canada, water heaters are available on a rental basis from various utility companies.

Major Laundry Appliances

Depending on space available and the prices you can afford to pay, your laundry center may be in any part of your home—bedroom/bath area, near or in the kitchen, in the basement. Popular new stack-on, compact washer/dryers and portable washer and dryer models offer a variety of choices and are versatile in planning a laundry area to meet your needs even if you live in an apartment.



WASHERS

The clothes washer should be purchased with care since it represents a sizeable investment and generally is used often. There are two types of washers on the market today—nonautomatic and automatic.

Nonautomatic washers require manual operation to fill the tub, start the washing action, rinse clothes, remove water from the clothes, and drain the tub. Wringer machines have a power-driven wringer that clothes must be fed through by hand to remove water. Twin-tub spin-dry washers have a built-in or attached spinner tub that clothes must be transferred into for rinsing and removing water. A nonautomatic machine may be your choice if your water pressure is not high enough for the automatic operation.

Automatic washers are power-driven machines that wash, drain, rinse and damp dry clothes with one setting of the controls. Installation requires permanent or temporary connections to hot and cold water pipes, a drain, and separate electric circuit. In addition to adequate plumb[illegible] successful operation of an installed automatic washer depends on firm flooring and proper leveling. Portable automatic washers holding up to 5 pounds can be rolled to the sink and connected in the same way as portable dishwashers. To select the washer most suitable for you, consider the following points.

• **The washing capacity you need.** Washing capacity is indicated by the size of the wash basket. Capacity may be stated by manufacturers in pounds ranging from 1 to 20 pounds of dry clothes or by load such as family size, extra large, or standard. The washing capacity you need depends on the amount, size and bulk of the items you usually wash at one time; therefore, volume is the most reliable indicator.

• **The washing action you prefer.** The agitation which provides washing and rinsing action in modern washers varies with the type of washer. Since all types of agitation are effective, your selection will depend on personal preferences.

• **The controls you want.** Some washers provide controls for selection of wash and rinse temperatures, length of washing time, water level, and agitation and spin speeds. Some more expensive models feature programmed controls; you select only one control, based on fabric type and amount of soil, and the washer automatically provides the appropriate washing conditions.

• **The supply of hot water available.** The amount of hot water required in an automatic washer depends on the combination of hot, warm and cold water selected to complete the entire wash and rinse cycle. Hot water needed to complete a load ranges from a minimum of 3-1/2 gallons to a maximum of 38 gallons, depending on the size of the machine and whether wash and rinse water is hot, warm or cold. Remember, the washer cannot control the hot water temperature; the water heater setting and capacity determine the wash-water temperature.

• **The type of water fill you need.** There are two ways the automatic washer may fill with water—by time or pressure. If the water pressure is low, pressure or metered fill will provide proper amounts of water for the load.

• **The type of rinse you prefer.** Three types of rinses are found on washers—spray, deep and overflow. The spray rinse begins during the spin cycle and creates a flushing action that is very effective. A deep rinse fills the wash basket with clean water and provides agitation to remove soil and detergent. An overflow rinse usually is found in a washer with a nonperforated tub. The tub is filled to overflowing to float soil over the top of the basket. Most washers have two types of rinse and some have all three.

• **The construction you want.** Look for durable, easy to clean exterior and interior finishes. Doors on front opening machines should have tight seals and strong catches.

• **The features you value.** Below are some of the features you find on modern washers. Decide which features you really need and make a checklist to take with you when you shop.

Washer features

_____ selective water level control for different size loads

_____ manual or automatic controls with choice of settings for soak, prewash, wash and spin speeds, water temperature, and wash and rinse time

_____ special cycle for permanent or durable press

_____ automatic dispensers for detergent, bleach, fabric softeners, water conditioners

_____ operating instructions printed inside of lid

_____ lint removal system

_____ self-balancing feature to handle unbalanced loads

_____ easy access to parts for servicing

_____ weighing lid to help estimate proper size of loads

_____ small tub to fit over agitator post for very small loads

_____ hand-wash agitator stored under normal-wash agitator post

_____ suds and water return system for reuse of hot water and detergent from wash cycle

DRYERS

Clothes dryers have become more popular as they provide year-round drying convenience with best results for many permanent press items. A gas or electric dryer operates by evaporating water from fabrics through a combination of heat, air flow, and tumbling. Moist air is forced through a moisture exhaust duct that usually is connected to the outdoors. Also available are small 5-pound capacity portable automatic dryers that operate on 115 volts, require no outside venting, and can be rolled out for use. To select the dryer most suitable for you, consider the following points.

- **The drying capacity.** The capacity you need may depend on the capacity of your washer. The dryer capacity may be stated by manufacturers in pounds or by load such as family size, extra large, or standard.

- **The controls you prefer.** Selection of controls depends on the type of fabrics to be dried and the degree of automation you want. Time controlled dryers allow you to select the drying time and sometimes the temperature; automatically controlled dryers automatically shut off by measuring conditions within the dryer or dampness of fabrics.

- **The installation of a dryer in your home.** Installation requirements depend on the type of dryer you buy. Gas dryers must have connections with the gas line and a 120-volt appliance circuit. Gas heats the air that is circulated; electricity operates the drum, fan, timer and light. Electric dryers may require special wiring because they usually require a special 240-volt electric circuit. However, slow drying electric dryers are available for use on a 120-volt appliance circuit. An electric or gas dryer should be vented to the outside (unless it is a condensation type) to protect the house from condensation in winter and air-conditioning overload in summer.

- **The features you value.** Check the automatic dryer features you need from the following.

Dryer features

_____ controls with settings for no-heat or no-tumble drying . . . different times and temperatures . . . permanent press . . . damp dry

_____ end-of-cycle buzzer or signal light

_____ cooling at end of cycle

_____ foot pedal to operate the door

_____ interior lights

_____ stationary drying rack on the door

_____ moisture sensors to obtain any degree of dryness or dampness desired

_____ automatic restart of dryer every five minutes at end of cycle to prevent wrinkling when clothes are not removed immediately

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Floor Care Appliances

Modern floor care equipment is designed to effectively remove dirt and soil with a minimum of effort. The vacuum cleaner is the most effective tool for rugs, carpets and general home cleaning. The shampoo/polisher is a labor-saving appliance for cleaning, waxing, polishing and buffing hard floor surfaces and shampooing carpets and rugs. These jobs can be performed by some floor care combination appliances that also are capable of scrubbing and picking up water from hard surface floors as well as applying wax.

Vacuum cleaners perform cleaning jobs by suction, sweeping and/or agitation. Straight suction cleaners are operated by a motor-driven fan that draws dirt through the nozzle into the dust bag and returns clean air to the room. Motor-driven brush cleaners use the suction principle plus sweeping action achieved by motor-driven brushes. Motor-driven agitator cleaners combine suction and sweeping with agitation by vibrator bars and brushes on a rotating cylinder. Many new vacuum cleaners are designed to clean various carpet pile heights from indoor-outdoor carpeting to shag rugs. The chart on the next page describes several types of vacuum cleaners and the jobs each can accomplish.

Vacuum Cleaners

Type	Cleaning Principle	Jobs Performed Best
Upright	uses suction and sweeping action in all models and agitation in some; some also are equipped for above the floor, straight suction cleaning	for cleaning rugs and carpets; for general cleaning
Tank or Canister	essentially a straight suction vacuum cleaner but some models are equipped with an accessory tool which provides revolving and/or agitator-brush action	for carpets and general home cleaning
Stick or Broom	some clean entirely by suction; others have motor-driven brushes	for hard surface flooring and light carpet cleaning
Hand	reduced suction unit (motor and dirt receptical) may be held in your hand or hung from your shoulder	for light cleaning tasks such as automobile interiors, upholstery furniture, and mattresses
Central Built-in System	straight suction consists of a permanently installed motor and dirt container with plug-on hose connections located around the home	all-purpose cleaning

Since vacuum cleaners usually may be purchased with or without attachments, consider carefully whether you will really use the tools and accessories before you pay extra money for them. There are vacuum cleaner accessories for many other jobs besides cleaning. When buying these tools, avoid duplicating any other equipment you may already have.

Floor polishers that scrub, wax and polish hard surface floors can be purchased or rented. Most floor polishers also have special brushes for cleaning rugs. Cleaning and polishing is done by revolving or oscillating brushes that are connected to the motor by a belt or a system of gears. Some models are capable of picking up dirty water from the floor.

Before buying any floor care appliance, look for the following features:

- **equipment designed for easy mobility** . . . lightweight materials used in construction . . . a cord that is long enough (minimum of 16 feet) . . . if applicable, a swivel top, shoulder strap, or wheels
- **a motor** with quiet operation and power selection for various cleaning jobs
- **bumper guards and smooth edges** on both the cleaner and attachments to prevent damage to furniture, walls and carpets
- **attachments** that are easy to assemble and fit tightly
- **a handle** that is comfortable to grip and easy to adjust
- **a dust bag (for dirt in vacuum cleaners) or a dispenser tank (for cleaning solution in floor polishers)** that is adequate in size, easy to attach and detach, disposable or easy to clean. Some models may have signals to indicate when the bag is full.
- **a hang-up handle, self-winding cord, and built-in compartment** for tools to facilitate storage
- **a headlight** to lighten dark areas ahead of the cleaner
- **a power drive** to move the cleaner forward

Portable Electric Appliances

Today's houseware market offers a wide variety of portable electric appliances for food preparation, cooking and personal care. From coffee makers and blenders to hair dryers and automatic toothbrushes, small appliances are basically of two types—those that are heat-producing and those that are motor-driven.* Select portable kitchen and grooming appliances carefully to be sure you will use them enough to warrant their cost. The following points may help you get the most for your money when buying any small appliance. Consider:

- **the number of tasks an appliance will do.** It is less expensive to buy one appliance that performs several jobs than to buy a separate piece of equipment for each job. Combination appliances also simplify storage problems. However, limiting the number of jobs that can be performed at one time may be inconvenient.

*Rotisseries, hair dryers, and grooming combs provide both heat and motion.

• **how frequently the appliance will be used.** Some portable appliances are used daily, while others may be used only a few times a year. Decide whether the amount of use you can gain from equipment is worth its price.

• **whether an appliance duplicates equipment you have.** Portable appliances often perform tasks similar to those done by major appliances or other small appliances. Decide whether the convenience of having an extra piece of equipment is worth the expense.

For example, you may do most of your cooking and baking on your range. However, some portable heating appliances offer the convenience of cooking and baking out of the kitchen area as well as ease of cleaning. Some offer advantages of greater economy than cooking on an electric range (i.e., roaster-oven, toaster, coffee maker).

An appliance that offers economy and more carefree, cooler cooking is the slow cooker. Because it operates at such low heat, overcooking and shrinkage are unlikely to occur. Crockery cookers are especially useful to cooks who must be gone all day, because no pot-watching, stirring, or adjusting of the heat is required.

• **where the appliance will be stored.** Small appliances may create a storage problem. When you are considering a particular appliance, check its size and shape against the space you have for storage. Try to arrange a place for each appliance that will be convenient for setting it up and using it. Appliance cabinets which are specifically designed for the storage of small equipment are available and may be a wise investment if you have a number of small appliances and no suitable place to store them.

• **what the general construction offers.** Small appliances should be constructed with lightweight but sturdy materials that are resistant to rust and tarnish. Handles and knobs should be heat resistant and easy to grasp; controls, convenient to use and easy to read.

• **the features that are offered.** Small appliances offer the basic convenience of being portable. They may provide other features such as those described in the list below.

1. **Nonstick surfaces** eliminate scrubbing and scouring, make cleaning easier, and provide for low fat cookery.

2. **Immersible appliances** have removable heating controls or sealed-in controls that make it possible to put the appliance into water for cleaning.

3. **Removable heat controls** make it possible to immerse appliances (with control removed) for washing; or, one control may be used with as many as six appliances of the same brand.

4. **Multipurpose appliances** perform more than one function. An electric mixer may have attachments for knife sharpening, can opening, ice crushing, or meat grinding. A frypan with a high dome lid may double as a small oven. A hot comb offers styling in addition to the drying qualities of a hair dryer.

5. **Power motors** may be stationary or portable and provide the power and mechanism to operate several appliances including mixers, blenders, juicers, knife sharpeners, coffee and meat grinders. These power units may come separately, offering the opportunity to buy the appliances as you need and can afford them, or the power unit may come complete in a package with all of the appliances that can be used on it.

6. **Table appliances** are attractive and can be used both for cooking and serving.

7. **Cordless appliances** powered by disposable or rechargeable batteries offer added portability for furniture or shoe polishers, upholstery shampooers, electric shavers, etc. They may require an appliance outlet for recharging the battery, cost more, and have less power than similar plug-in appliances.

USING HOUSEHOLD EQUIPMENT

By using equipment properly and efficiently, you can save money and at the same time help conserve energy and other resources--gas, electricity and water. To become more alert about ways to minimize energy waste, ask yourself the following questions:

1. Do you buy and use only those appliances that are necessary to your personal situation? Remember, every additional appliance you use increases energy usage--and your utility bills.

2. Do you read the instruction booklet thoroughly before using an appliance? Follow directions for normal use and care and keep the reference handy. If you do not understand how to use the appliance, ask your dealer or utility company for a trained representative to help you.

3. Do you minimize hot water use whenever possible? The major cost in clothes washing can be reduced by setting more loads for cold and warm water cycles.

4. Do you run only full loads in washers, dryers and dishwashers? On the other hand, avoid overloading as the jobs may have to be repeated, using more energy and water.

5. Do you bake several items at once when possible? If you bake three dishes in the same oven together, you use less energy than baking them separately. Also, baking is less expensive in the long run than cooking on top of the range. Surface units or burners stay on the whole time they are in use; oven units or burners are on for only part of the baking time.

6. Do you defrost the freezer or freezing compartment when frost is about one-fourth inch thick? Frost decreases efficiency since the freezer must work harder to maintain the same temperature.

7. Are you sure that refrigerator, freezer and freezing compartment doors have tight seals? Check the gaskets by placing a dollar bill between the gasket and cabinet; there should be a slight drag as you pull the bill straight out.

8. Do you utilize portable electric appliances (that use less electricity) for specialized jobs? For example, it costs three times as much to toast bread in an oven as in a toaster.

9. Do you use the appropriate temperature setting or timing when drying laundry? A lower drying temperature or decreasing the drying time uses less energy.

10. Do you keep appliances in good repair? The age and condition of an appliance affect its operation.

Servicing

Because appliance servicing by a skilled repairman can be costly, you will be wise to minimize service calls whenever possible. Since many appliance problems result from conditions that you can correct, always check the following before calling a serviceman.

_____ Manufacturer's instructions have been followed—controls are set, doors are latched, and the appliance is plugged in and turned on.

_____ Fuses and circuit breakers are good—neither blown nor tripped.

_____ Water, gas and electric connections are turned on properly and have not temporarily been disconnected.

_____ Instruction manual does not offer a possible explanation.

_____ The model number on the appliance name plate has been recorded for your reference when calling for service.

If you do need to have an appliance serviced, carefully read the guarantee or warranty *before* you call. Then you will be familiar with the type of service and repairs covered by the terms of the guarantee. Remember, to prevent jeopardizing your warranty, do not take the appliance apart yourself.

Safety

For safety when using home appliances, read all instructions carefully, use the equipment properly, and care for it as recommended by the manufacturer. Remember the following guidelines to avoid accidents.

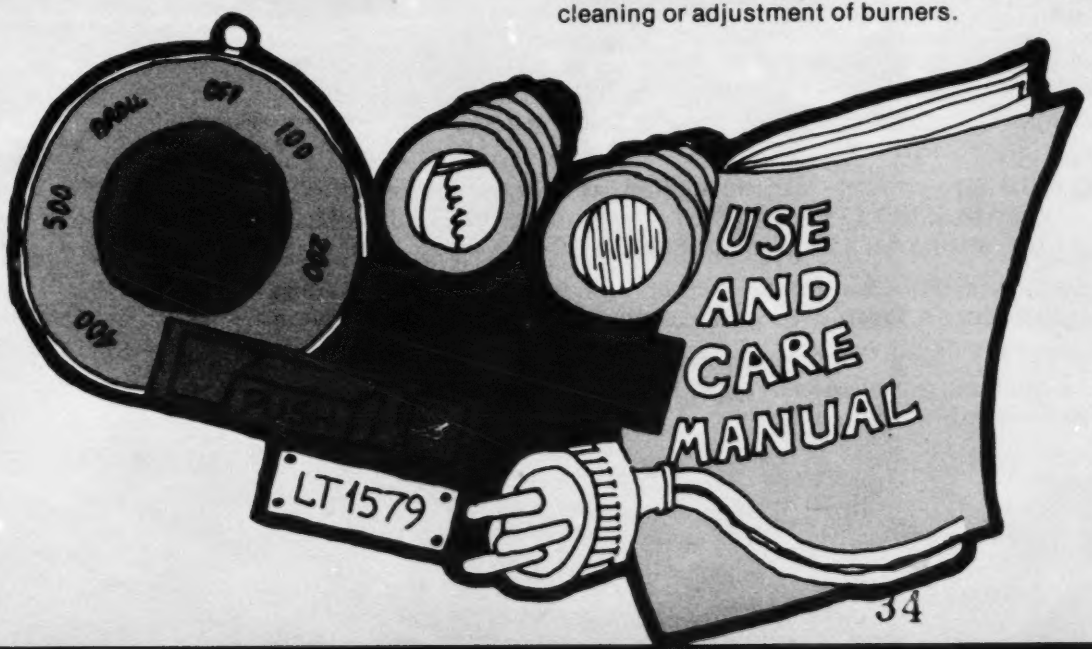
- **Use electric appliances with care.** Disconnect before cleaning or handling . . . touch one connected electric appliance at a time . . . avoid using ungrounded appliances when you are wet or standing on a damp surface.

- **Keep cords in good condition.** Watch for wear and tear . . . avoid running cords through doorways, under rugs, near water pipes, or across traffic areas. Do not coil cords too tightly or wrap them around hot appliances. Keep excess cord out of children's reach when portable appliances are in use.

- **Connect and disconnect appliances properly.** Attach portable appliance cords first to the appliance, then to the outlet . . . detach from outlet first . . . grasp the plug, not the cord.

- **Use on-off switches.** If possible, never disconnect a plug from an outlet without first turning the appliance off.

- **Follow safety procedures in using gas appliances.** Light gas equipment without a pilot light by applying match to burner before turning on gas . . . keep flammable items away from open flame . . . look for blue flame; yellow flame shows need for cleaning or adjustment of burners.



Conclusion

Equipment in the home provides convenient and efficient ways to minimize the time and energy needed for household chores and personal care. But remember, the number and kind of appliances you have and use are reflected in your financial plan as well as utility and repair bills. You will gain the greatest satisfaction from your equipment dollars when you plan your spending according to your individual values and income.

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MILDRED G. ARNOLD, *Professor Emeritus, Consumer Sciences and Housing, Colorado State University,* Fort Collins, Colorado.

ROSEMARY BALLAGH, *Manager—Marketing Services, Consumers' Gas Company,* Willowdale, Ontario.

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JANET K. FELMETH, *Director, Home Economics Institute, White-Westinghouse Appliance Company,* Pittsburgh, Pennsylvania.

MARYLYNN GODDARD, *Director, Home Institute, The Hoover Company,* North Canton, Ohio.

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LYLE MAMER, *Former Associate Professor, Department of Crafts, Interior Design and Housing, College of Home Economics, The University of Tennessee,* Knoxville, Tennessee.

HERBERT PHILLIPS, *Vice President, Engineering, Association of Home Appliance Manufacturers,* Chicago, Illinois.

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